Novel Nonthermal Versus Thermal Endovenous Ablation in Superficial Venous Incompetence; A Systematic Review and a Metaanalysis of Comparative Studies


**Introduction**

In recent years, endovenous thermal ablation (TA) has emerged as a reliable alternative to traditional open approaches in the treatment of superficial venous reflux. Novel non-thermal Ablation techniques (NTA) including mechano-chemical ablation (MOCA) (Clarivein, Vascular Insights, Madison, CT, USA) and Cyanoacrylate closure (CAVA) (Venaseal, Medtronic, Santa Rosa, California, USA and Variclose, Biolas, Ankara, Turkey) have been developed with a view to removing thermal injury risk. These techniques preclude the risk of nerve damage while Cyanoacrylate closure obviates the need for post-interventional compression stockings.

**Methods**

Type of research: A metaanalysis and systematic review of comparative studies.

Key findings:

Comparison of 1,256 thermal and non-thermal truncal ablations (NTA) revealed similar technical successes in both groups (Pooled Risk Ratio (RR)=1.00 [95% CI, 0.99,1.01]) with a lower rate of ecchymosis in the non-thermal group [RR=0.43 (95% CI, 0.23, 0.78)]. Complication rates were otherwise similar in both groups.

**Take Home Message:** NTA are safe and effective modalities in treating superficial venous incompetence with less pain.

**Conclusion**

Non-thermal ablation offers an effective and safe alternative to thermal ablation. Additionally, periprocedural pain data and marginally better QoL favor NTA. However, data were exposed to potential biases and there is a need for further powered trials to definitively examine this hypothesis.